



Vulcan Seals Type VR1

Technical Data Sheet



Product Description

The **Vulcan Seals Type VR1** material is essentially pure carbon in Graphite form processed into flexible foil material without any fillers, binders, or other additives. The product is self-lubricating, dimensionally stable, impervious to gases and fluids, and shows exceptional temperature and chemical resistance. Grafan offers unrivaled sealing capabilities under extreme temperature, media, and pressure conditions giving extended packing life.

Graphite in this form is self-lubricating with a low coefficient of friction (comparable to Teflon), high thermal conductivity, and permanent volumetric elasticity (spring back) which results in no volume reduction (compression set) in use. Resilient with ideal fluid and gas sealing characteristics and extreme capabilities, Grafan offers the ultimate range and performance in a packing material.

Vulcan Seals Type VR1 is a crimped Grafan ribbon tape, available from 6mm to 75mm wide, for in situ packing of valve stems and then it is easily compressed into a uniform packing ring. Using this system, a small tape inventory can pack any size of the gland with superior service results.

Suitable Industries

The Vulcan Seals Type VR1 is suitable for use in:

- ✓ Power generation
- ✓ Steam and thermal systems
- ✓ Petrochemical processing
- ✓ Chemical processing
- ✓ Refining and energy
- ✓ Industrial utilities
- ✓ OEM seal manufacturing and refurbishment

The Vulcan Seals Type VR1 is not suitable for use in:

- ✗ High-speed rotary equipment
- ✗ Applications requiring braided structural reinforcement
- ✗ Severe dynamic shaft movement
- ✗ Strong oxidising media

Chemical Properties

- Base material: Expanded graphite
- Carbon content: >98%
- Compressibility: 25-50%
- Density: Approx. 1.0 g/cm³
- Low friction coefficient: ≤0.2
- Thermal stability: Low ignition loss (<10% at 450 °C)

Why Choose the Vulcan Seals Type VR1?

- Exceptional temperature and chemical resistance
- Designed for use in static applications
- Self-lubricating, dimensionally stable, and impervious to gases and fluids



Valves - Operating Limits

Max Operating Pressure	Linear Speed	Min Operating Temperature	pH Range
100 bar	Static Only	10°C / 50°F	4 - 12



Centrifugal Pumps - Operating Limits

Max Operating Pressure	Linear Speed	pH Range
50 bar	12 m/s	4 - 12



Reciprocating Pumps - Operating Limits

Max Operating Pressure	Linear Speed	Min Operating Temperature	pH Range
80 bar	≤1 m/s	10°C / 50°F	4 - 12

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**All information supplied within, has been given in good faith and in Vulcan Seals' best judgement. It is meant for guidance purposes only. Vulcan Seals reserves the right to amend all statements, dimensions and technical data without prior notice.



Dimensional Data

Cross Section. Sq (inch)	Packaged Weight (kg)	Packaged Weight (lb)	Packaged Weight (lb) US ONLY	Length of Coil (m)	Product Code	US Product Code
1/4"	0.048	0.106	-	15	VR1.1/4	-
3/8"	0.071	0.157	-	15	VR1.3/8	-
1/2"	0.095	0.209	-	15	VR1.1/2	-
5/8"	0.116	0.256	-	15	VR1.5/8	-
3/4"	0.143	0.315	-	15	VR1.3/4	-
1"	0.191	0.421	-	15	VR1.1/0	-

Please note that the lengths and weights provided are for informational purposes only and are not contractual.

Gland Packing Replacement Range

The Vulcan Seals Type VR1 is a dimensional replacement for the following gland packing ranges:

- AESSEAL® | 370
- Burgmann® | 4045
- Drew® | 1000
- James Walker® | 505 Supagraph
- I.M.P.® | 49
- Palmetto® | 1400
- Robco® | Graf Tape
- Apollo® | Graf-Pak
- Chesterton® | GTP
- Flexitalic® | 160
- Garlock® | Graph-Lock
- Latty® | Lattygraf
- Palmetto® | Palfoil
- Tombo® | 2220 RP
- Burgmann® | 4040
- Depac® | 700
- Flexitalic® | 161
- John Crane® | K 40
- Merkel® | Graf Flex Tape
- Pillar® | 6650

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